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| APPLICATION NO.                                 | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/711,882                                      | 10/12/2004  | Chen-Hsiung Yang     | TMIP0001USA         | 5881             |
| 27765   | 7590        | 10/05/2006           | EXAMINER            |                  |
| NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION |             |                      | GUTIERREZ, KEVIN C  |                  |
| P.O. BOX 506                                    |             |                      | ART UNIT            |                  |
| MERRIFIELD, VA 22116                            |             |                      | PAPER NUMBER        |                  |
|   |             |                      | 2851                |                  |

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

A

|                              |                        |  |                     |  |
|------------------------------|------------------------|--|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> |  | <b>Applicant(s)</b> |  |
|                              | 10/711,882             |  | YANG, CHEN-HSIUNG   |  |
|                              | <b>Examiner</b>        |  | <b>Art Unit</b>     |  |
|                              | Kevin Gutierrez        |  | 2851                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 September 2006.
- 2a) ☐ This action is **FINAL**.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 6-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All   b) ☐ Some \* c) ☐ None of:
    - 1. ☒ Certified copies of the priority documents have been received.
    - 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed September 8, 2006 have been fully considered but they are not persuasive.

Regarding the applicant Remarks (page 5), the applicant asserts an argument regarding figures 3 and 4 of the Ledger reference. However, the Examiner does not rely on the embodiment corresponding to Figure 4.

Regarding the applicant Remarks (page 5 and page 7), the applicant states "Ledger fails to teach or suggest any use of bonding layer to fix wafer on the chuck" and "this mechanism does not allow use of a bonding layer." However, this deficiency is cured by Strasbaugh et al. (see claim 3). It would be obvious to one ordinary skilled in the art to use a bonding layer fix to the wafer on the chuck for at least the purpose of providing a secure support. Thus, it would reduce air space between the wafer and the chuck. Therefore, the combined teachings of Ledger and Strasbaugh et al. disclosed the claimed invention.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 1-3, 6-8, 10-14, 16-18 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ledger et al. (5,515,167) in view of Strasbaugh et al. (US 2003/0134578).

Regarding claims 1, 6, 12 and 16, Ledger et al. discloses

- “a transparent base (fig. 3, 34; membrane, col. 5, lines 42-44);
- a conducting layer (32; conducting film) positioned on a bottom surface of the transparent base (see figure 3, where conducting layer 32 is located beneath transparent base 32);
- wherein the wafer carrier is attracted by an electrostatic chuck (24) via the conducting layer (col. 5, lines 5-7).”

Ledger et al. does not disclose a (claims 1 and 12) “bonding layer positioned on a top surface of the wafer carrier for bonding the wafer and the transparent base together” and (claims 6 and 16) “wherein the bonding layer is selected from the group consisting of double-sided tape, ultra violet tape, thermal sensitive tape, photo resist, and wax.”

However, having a bonding layer of double-sided tape, ultra violet tape, thermal sensitive tape, photo resist, or wax which bonds the wafer and the transparent layer is known to the art as it is evident by the teaching of Strasbaugh et al. (see claim 3). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the chuck Ledger et al. by including a tape bonding layer utilized in a manner described above for at least the purpose to provide a secure support.

Regarding claim 2, Ledger et al. further disclose “wherein the transparent base has dimensions similar to that of the wafer (col. 5, lines 49-51).”

Regarding claim 3, Ledger et al. further disclose “wherein the transparent base is a glass wafer (col. 5, lines 42-44).”

Regarding claim 7, Ledger et al. further disclose “wherein the wafer is transferred and undergoes at least a semiconductor process (col. 8, lines 62-65).”

Regarding claims 8 and 17-18, Ledger et al. further discloses a semiconductor process (col. 8, lines 62-65) and an alignment mark system (col. 7, lines 1-4). Ledger et al. does not disclose “wherein the semiconductor process is a double-sided process.”

However, it would be obvious to one ordinary skilled in the art that the invention of Ledger et al. is capable to perform a double-sided semiconductor process. Ledger et al. teaches where the apparatus can repeatedly perform patterning procedures (col. 8, lines 62-65). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to further modify the semiconductor process of Ledger et al. as modified by implementing a double-sided semiconductor process for at least the purpose of reducing cost production.

Regarding claims 10 and 20, Ledger et al. further disclose “wherein the conducting layer is a non-transparent conducting layer (32) having at least an exposed region corresponding to the alignment mark (col. 7, lines 1-4).

Regarding claim 11, Ledger et al. further disclose “wherein the non-transparent conducting layer comprises a plurality of conducting patterns connected with each other (col. 5, lines 32-38).”

Regarding claim 13, Ledger et al. further disclose “wherein the transparent base has dimensions similar to that of the wafer (col. 5, lines 49-51).”

Regarding claim 14, Ledger et al. further disclose “wherein the transparent base is a glass wafer (col. 5, lines 42-44).”

Regarding claim 21, Ledger et al. further disclose “wherein the non-transparent conducting layer comprises a plurality of conducting patterns connected with each other (col. 5, lines 32-38).”

4. Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ledger et al. in view of Strasbaugh et al., as applied to claims 1 and 12, and in further view of Suzuki et al. (US 2003/0029565).

Ledger et al. disclose a transparent base, but does not disclose “wherein the transparent base is a quartz wafer.”

However, having a quartz wafer as a transparent base is known to the art as it is evident by the teaching of Suzuki et al. ([0051], lines 2-3). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to modify the transparent base of Ledger et al. by having the transparent base as a quartz wafer for at least the purpose of having a stronger base.

5. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ledger et al. in view of Strasbaugh et al., as applied to claim 8, and in further view of Bollen et al. (4,766,515).

Ledger et al. further disclose a conducting layer, but does not disclose “wherein the conducting layer is a transparent conducting layer.”

However, having a transparent conducting layer is known to the art as it is evident by the teaching of Bollen et al. (col. 3, lines 13-15). Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to further modify the conductor layers of Ledger et al. as modified by having them as transparent conducting layers for at least the purpose of reducing the weight composition of the chuck.

### *Conclusion*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Gutierrez whose telephone number is (571)-272-5922. The examiner can normally be reached on Monday-Friday: 8:00 a.m. - 5:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571)-272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin Gutierrez  
Examiner  
Art Unit 2851

September 26, 2006

Rodney Fuller  
Primary Examiner

